A wide-ranged people read-based survey about the general use of electronic cigarettes: their constituents and detrimental impacts on health

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Abstract

This study was conducted for reading some of the existed health impacts caused by the use of electronic cigarettes (ECs). A survey based knowledge was encouraged for collecting information regarding the detrimental effects brought by the utilization of ECs as replacement for the tobacco cigarettes (TCs). Various ages of 188 TC, hookah cigarette (HC), and EC consumers from Wasit Province, Iraq, were participated in the current work that continued for nine months. The results of the questionnaire indicated that for the 15-to-25-year-old people were 5% of them had quit smoking permanently and 40% had reduced smoking of TCs and HCs to the half of their daily consumption as well as 30% of them had showed no changes of consumption. As for the remaining, 25%, they had respiratory health problems due to the use of ECs, so they did not find the desire to quit or reduce TC and HC smoking as a result of using ECs. The results of the questionnaire indicated that for the participants of 25 to 35 years of age, 10% of them had quit smoking and 50% had reduced TC and HC smoking to the half of their daily consumption; however, 15% of them had not shown any changes of daily consumption. Moreover, 25% of this age category had EC-use-related respiratory health problems, so they had not revealed a desire to quit or reduce TC and HC smoking. The outcomes of the questionnaire indicated that for the 35-to-50-year-old category were 20% of them had quit smoking, and 60% of them had reduced TC and HC smoking after using ECs to the half of their daily consumption, while the remaining, 20%, of them had EC-consumption-related respiratory health issues, so they had not gained a desire to quit or reduce TC and HC smoking. For all the age categories, the percent of participants who completely quit TC and HC smoking was 15% with 60% of people who reduced this consumption; however, 25% of participants were with EC-use-based respiratory health issues that had not let them to quit TC and HC smoking by
using ECs instead. The current survey provides some vital questionnaire results for the importance of using electronic cigarettes.

**Keywords**: Electronic cigarettes, hookah cigarettes, respiratory health, tobacco cigarettes.


**Introduction**

The first concept for replacing TC smoking started in 1963, where this idea was based on replacing TCs by hot steam with flavor. After this, in 2003, the Chinese scientist, Hon Lik had developed a method of vaporizing the propylene glycol solution utilizing ultrasound via an electrical apparatus with a compressor as it made its first appearance on the Chinese market in 2004 as an alternative and assistant to quit TC and HC smoking. The company that he had worked in started selling its products to global markets in 2006, and 12 months later, the manufacturer received a global patent for this invention\(^1\).

Recently, an extraneous phenomenon appeared in Iraq, and it is trading has been with noticeable increases without performing scientific studies about the damages that can be caused by the use of ECs, battery-powered devices that people use to inhale the vapor emitted from them, which usually contain nicotine, flavors, and other chemicals. However, they can be presented as regular TCs or HCs. Regardless of their designs; these devices generally operate in a similar technique and are made of similar components. There are over 460 different brands of ECs in the market right now. ECs can take different names such as electronic hookah, vibe, electronic nicotine delivery systems, and evaporators (vaping as more intense)\(^2-6\).

Most ECs consist of four different components, including arefilled-liquid-solution (nicotine with varying concentrations, flavors, and other chemical ingredients) tank, a heating coil (atomizer), and a power source (battery). When the power button is pressed, electrical charges resulting from the battery pass through the coil with cotton dipped in the liquid starting the heating process, and when the smoker inhale-sucks using mouth, steam is generated by a process called vaping\(^7,8\).
Some ECs are of high quality; however, there are no specific international standards for acceptable designs, contents, concentrations, purity, safety, and recommendations for safe use, and there are no appropriate methods for consumers to be able to access and verify safety data for each product. Therefore, these cannot be certified as safe products. For example, if a smoker heavily inhale-sucks out of the device, the liquid containing nicotine may enter the mouth leaving nicotine to be absorbed by the oral mucosa or accidentally swallowed. Moreover, liquid spills on the hands, probably absorbed through the skin, can be induced when refilling of the tank is performed. In addition, ECs are not eliminated naturally after several sucks like the TCs; however, it can be continued to work for unusual amount of sucking times consuming large amounts of nicotine and leading to the appearance of serious symptoms of nicotine poisoning, according to the German Federal Institute for Risk Assessment. Moreover, some ECs can be exploded leaving users with serious injuries (9–14).

This study was conducted for reading some of the existed health impacts caused by the use of ECs.

**Materials and methods**

Various ages (15-50 years old) of 188 TC, HC, and EC consumers from Wasit Province, Iraq, were participated in the current work that continued for nine months. This study was conducted for the period from May 1, 2019 to February 1, 2020, and the variation in the results may be due to psychological, social, and physical factors in the participants.

**Results**

The results of the questionnaire indicated that for the 15-to-25-year-old people were 5% of them had quit smoking permanently and 40% had reduced smoking of TCs and HCs to the half of their daily consumption as well as 30% of them had showed no changes of consumption. As for the remaining, 25%, they had respiratory health problems due to the use of ECs, so they did not find the desire to quit or reduce TC and HC smoking as a result of using ECs. The results of the questionnaire indicated that for the participants at 25 to 35 years of age were 10% of them had quit smoking and 50% had reduced TC and HC smoking to the half of their daily consumption; however, 15% of them had not shown any changes of daily consumption. Moreover, 25% of this age category had EC-use-related respiratory health problems, so they had not revealed a desire to quit or reduce TC and HC smoking. The outcomes of the questionnaire indicated that for the 35-to-50-year-old category were 20% of them had quit smoking, and 60%
of them had reduced TC and HC smoking after using ECs to the half of their daily consumption, while the remaining, 20%, of them had EC-consumption-related respiratory health issues, so they had not gained a desire to quit or reduce TC and HC smoking. For all the age categories, the percent of participants who completely quit TC and HC smoking was 15% with 60% of people who reduced this consumption; however, 25% of participants were with EC-use-based respiratory health issues that had not let them to quit TC and HC smoking by using ECs instead, figure 1, 2.

Figure 1: The effects of electronic cigarette usage on regular tobacco cigarette consumption continuity.
Discussion

The results showed important answers of the participants reflecting the degrees of beneficiary for the use of electronic cigarettes on regular tobacco and hookah cigarette consumption continuity. These findings agree with recognized information from various studies regarding the ongoing aims. Although some studies show that ECs are helpful for quitting attempts of smoking regular tobacco cigarettes, findings of a U.S. national survey of 729 existing and previous smokers have revealed that smokers are unhappy with new smoking devices returning to the ordinary smoking method or worked on using both ECs and TCs. The mouthpiece inhaled nicotine into the breath ways and the person exhaled a cloud-like vapor. ECs have gained on new forms as technology evolves. New ECs have become mobile tools in which consumers may customize their products to their needs. EC consumers can now

Figure 2: The effects of electronic cigarette usage on regular tobacco cigarette consumption continuity.
change the device power and heat. The range of accessible types of e-liquids ensures there is a flavor that suits everyone's needs. ECs have developed rapidly from a smoking substitute to a cloud-chasing experience\(^{(15-18)}\).

Two controlled studies to date have revealed that ECs are not efficient devices for smoking quitting. The first research was performed in New Zealand, which included smokers to quit smoking and discovered that ECs as a device for cessation of smoking was not excellent for fulfilling this aim. The participants were randomly chosen to obtain Nicotinic ECs (nicotine at 10-16mg per milliliter), nicotinic patches (one patch daily; 21mg), or Placebo (Non-nicotinicECs), for 657 inspired smokers who fulfilled eligibility criteria. The six-month termination levels between the three classes did not show significant statistical variations; the confirmed quitting rates were 7.3 percent for ECs, 4.1 percent for non-nicotinic ECs, and 5.8 percent for the patches with nicotine. The experiments also demonstrated that 1/3 of participants continued to consume both ECs and TCs at the six-month period; however, the lower-dual use of patch consumers was noticed\(^{(19)}\).

The remaining study has also confirmed the non-usefulness of using ECs as an aid for the cessation of TCs in which 6,006 smokers who worked for some of USA companies were randomly categorized into five groups\(^{(20)}\). On the other hand, Hajek \textit{et al}\(^{(16)}\) have found an opposite situation in which ECs have helped in TC quitting when supported with behavioral practices. The current outcomes from the present trial revealed agreements with those studies mentioned above.

The current survey provides some vital questionnaire results for the importance of using electronic cigarettes.

\textbf{References}


